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*Ueber Beziehungen zwischen Farben und Tönen.* Prof. PIETRO ALBERTONI. Originalmittheilung, Centralbl. f. Physiol. No. 15, 26 Oct. 1889.

Drawing parallels between color and tone has been a tempting occupation to many people. Hauth for example assumes three primary colors, blue, yellow and red, and over against them three primary tones *c* (*do*), *e* (*mi*), *g* (*sol*). Prof. Albertoni has, he believes, found clinical evidence for something of the kind in the case of three color-blind persons. Two were red-blind and failed to distinguish *g* (*sol*); and one was green-blind and failed to distinguish *d* (*re*). The persons tested were of musical ear, and their failure to perceive these tones consisted in inability to distinguish them from neighboring tones on the piano and to sing them accurately when they were given. Some persons not red-blind were also found who could not produce *g* (*sol*), but whether from failure of perception or of voice mechanism does not certainly appear. For the first cases Albertoni proposes the name "auditory daltonism." [The natural comment on these observations is: Interesting, but in need of confirmation. It is not impossible that tone-deafness may be found more frequently in the color-blind; but what is to be said of its correspondence with the three-color Young-Helmholtz theory which seems now on the point of collapse? REV.]

E. C. S.

*Studien über die elementaren Farbenempfindungen. Erster Abschnitt.* FRITHIOF HOLMGREN. Skandinavisches Archiv für Physiologie, Bd. I, H. 1-3, 1889.

Finding himself definitely prevented from completing his studies, in large measure because of the eye-strain entailed by them, Prof. Holmgren is compelled to give his researches to the public, if at all, in their present incomplete condition. He is further urged to publication by the criticisms, both theoretical and experimental, which the preliminary accounts of his work have drawn from Hering (*Pflüger's Archiv*, Bd. xl, 1,) and Isaachsen (*Ibid.*, Bd. xlili, 289). His line of experiment was this, namely, to bring upon the retina a point of light fine enough to stimulate the visual elements singly, and thus call out the three fundamental sensations which should result according to the Young-Helmholtz theory. This first paper is devoted to the statement of the problem, to the preliminary experiments, and the choice and management of the apparatus. The experiment, if it can be generally verified, is one of such great importance for the theory of color vision, that the continuation of Holmgren's account of it will be looked for with interest. Incidentally, the author observed a very interesting instance of the effect of muscular sensations upon vision. In looking at his very faint and fine points of light with eyes somewhat elevated (the same thing, he says, may be seen on looking with the eyes in that position at a gas flame turned down to the faintest blue), the image seems to move constantly upward or in the direction of the muscular exertion—that is, the sensation of continued tension expresses itself in the illusion of continued motion.

E. C. S.

*Ueber Nachbilder im Binocularen Sehen und die binocularen Farbenerrscheinungen überhaupt.* H. EBBINGHAUS. *Pflüger's Archiv* XLVI, pp. 498-508.

Ebbinghaus describes a simple phenomenon in the subject of after-images that seems to have been hitherto overlooked. The left eye, say, looks at a bit of bright paper on a dark ground, while the other eye, being open, is prevented from seeing it by a piece of card-board. On suddenly shutting the left eye, a positive after-image is seen by the right eye on the piece of card-board. It is certain, Ebbinghaus thinks that this after-image is due to the right eye, because the circumstances